

*Replaced on 07 MAR 02***REPLACED BY
ART 34 AMDT****Claims**

1. A process for forming an electrically conducting film on a substrate, comprising, depositing metal particles and metal-chelates, mixed or separately, on a substrate to form a thin film composite, treating the composite sufficient to cause the decomposition of the metal chelate, and forming an electrically conducting film assemblage wherein decomposition products of the metal chelate form a conductive bond.
2. The process of claim 1 wherein treating the composite is by heat.
3. The process of claim 1 wherein treating the composite is by photolytic action.
4. A process for forming an electrically conducting film on a substrate, comprising, mixing metal particles and metal-chelates in a solvent, depositing the mixture on a substrate, evaporating the solvent, decomposing the metalchelates, and bonding of the metal particles by the metal-chelate decomposition products.
5. The process of claim 2 wherein the particle metal is nickel.
6. The process of claim 3 wherein the metal-chelate is selected from a group consisting of metal carboxylates, metal β -diketonates, metal amides, metal organometallics and metal alkoxides.
7. The process of claim 4 wherein the metal-chelate complex metal is nickel(cyclooctadiene)₂.
8. The process of claim 5 wherein the substrate is zinc oxide.
9. The process of claim 6 wherein decomposing the metal-chelate is by heating in air.
10. The process of claim 7 wherein heating is less than 200°C for 2 minutes.
11. The process of claim 1 wherein the particles comprise nanoparticles having a size in the range of 1-10 nm.
12. The process of claim 4 wherein the particles comprise nanoparticles having a size in the range of 1-10 nm.